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ABSTRACT OF THE DISCLOSURE

A reduced rank adaptive digital filtering method is described for a received signal consisting of a sequence of N x 1 received vectors. Each received vector is formed from a group of N successive samples. D + 1 basis vectors are generated where D is less than N and the dimension of a desired reduced rank subspace. Each successive basis vector is generated by multiplying an immediate preceding basis vector by the covariance matrix for the sequence of received sample vectors and the first basis vector is formed from a given or estimated steering vector. D filter coefficients are generated from correlations between pairs of basis vectors. The adaptive digital filter of the present invention achieves near optimal rank performance with substantially fewer training symbols than heretofore possible.